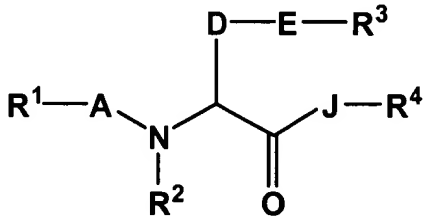
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously presented) An amino acid compound of the formula (I)



(I)

wherein,

R^1 is thiazolidinyl, oxazolidinyl or pyrrolidinyl which is substituted with (a) four C1-4 alkyl or (b) one substituent selected from the following (i)-(xii), and which may be substituted with 1 to 3 of substituent(s) selected from the group consisting of (i)-(xxiii):

(i) oxo,

(ii) C5-8 alkyl,

(iii) -COO-R^5 (in which, R^5 is hydrogen, C5-8 alkyl, C2-8 alkenyl, or C1-4 alkyl substituted with 1 to 3 of halogen or C1-4 alkoxy),

(iv) -(C1-4 alkylene)-COOR^6 (in which, R^6 is hydrogen, C1-8 alkyl, C2-8 alkenyl or C1-4 alkyl substituted with 1 to 3 of halogen),

(v) -CO-R^7 (in which, R^7 is C5-8 alkyl, C2-4 alkenyl, carbocyclic ring, heterocyclic ring or C1-8 alkyl substituted with one substituent selected from the following (1)-(8):

(1) carbocyclic ring,

(2) heterocyclic ring,

(3) hydroxy,

(4) C1-4 alkoxy,

(5) -OCO-(C1-4 alkyl),

(6) -O-(C1-4 alkylene)-O-(C1-4 alkyl),

(7) NR^8R^9 (in which, R^8 and R^9 each, independently, is hydrogen or C1-4 alkyl),

(8) halogen),

(vi) -(C1-4 alkylene)-CO-R^{10} (in which, R^{10} is C1-8 alkyl, C2-4 alkenyl, carbocyclic ring, heterocyclic ring or C1-8 alkyl substituted with one substituent selected from the following (1)-(8):

(1) carbocyclic ring,

(2) heterocyclic ring,

(3) hydroxy,

(4) C1-4 alkoxy,

(5) -OCO-(C1-4 alkyl),

(6) -O-(C1-4 alkylene)-O-(C1-4 alkyl),

(7) $NR^{11}R^{12}$ (in which, R^{11} and R^{12} each, independently, is hydrogen or C1-4 alkyl),

(8) halogen),

(vii) -CO-CO-R^{13},

(viii) -CO-(C1-4 alkylene)-CO-R^{14},

(ix) $-SO_2-R^{15}$ (in which, R^{13}, R^{14} and R^{15} each, independently, is C1-8 alkyl, C2-4 alkenyl, carbocyclic ring, heterocyclic ring, hydroxy, C1-4 alkoxy or C1-8 alkyl substituted with one substituent selected from the following (1)-(8):

(1) carbocyclic ring,

(2) heterocyclic ring,

(3) hydroxy,

(4) C1-4 alkoxy,

(5) -OCO-(C1-4 alkyl),

(6) -O-(C1-4 alkylene)-O-(C1-4 alkyl),

(7) $NR^{16}R^{17}$ (in which, R^{16} and R^{17} each, independently, is hydrogen or C1-4 alkyl),

(8) halogen),

(x) $-CONR^{18}R^{19}$ (in which, R^{18} is hydrogen or C1-4 alkyl which may be substituted with one phenyl, R^{19} is C1-8 alkyl or C2-4 alkenyl),

(xi) C1-8 alkyl substituted with 1 to 2 of substituent(s) selected from the group consisting of the following (1)-(7):

(1) hydroxy,

(2) C1-4 alkoxy,

(3) -O-(C1-4 alkylene)-O-(C1-4 alkyl),

(4) tetrahydropyran-2-yloxy,

(5) $-SR^{20}$ (in which, R^{20} is hydrogen or C1-4 alkyl),

(6) halogen,

(7) $NR^{21}R^{22}$ (in which, R^{21} and R^{22} each, independently, is hydrogen or C1-4 alkyl),

(xii) hydroxy,

(xiii) C1-4 alkyl,

(xiv) C1-4 alkoxy,

(xv) phenyl,

(xvi) phenoxy,

(xvii) benzyloxy,

(xviii) $-SR^{23}$ (in which, R^{23} is hydrogen or C1-4 alkyl),

(xix) C2-5 acyl,

(xx) halogen,

(xxi) C1-4 alkoxycarbonyl,

(xxii) nitro,

(xxiii) $-NR^{24}R^{25}$ (in which, R^{24} and R^{25} each, independently, is hydrogen, C1-4 alkyl or C1-4 alkoxycarbonyl, or R^{24} and R^{25} taken together with nitrogen atom to which is attached represents 5 to 7-membered saturated heterocyclic ring necessary containing one nitrogen atom and optionally further containing one nitrogen atom or one oxygen atom),

A is single bond, -CO- or $-SO_2-$,

R^2 is hydrogen or C1-4 alkyl which may be substituted with one phenyl,

D is C1-4 alkylene or C2-4 alkenylene,

E is

1) -COO-,

2) -OCO-,

3) -$CONR^{26}$- (in which, R^{26} is hydrogen or C1-4 alkyl),

4) -$NR^{27}CO$- (in which, R^{27} is hydrogen or C1-4 alkyl),

5) -O-,

6) -S-,

7) -SO-,

8) -SO_2-,

9) -NR^{28}- (in which, R^{28} is hydrogen or C1-4 alkyl),

10) -CO-,

11) -SO_2NR^{29}- (in which, R^{29} is hydrogen or C1-4 alkyl) or

12) -$NR^{30}SO_2$- (in which, R^{30} is hydrogen or C1-4 alkyl),

R^3 is

cyclopentylmethyl or cyclohexylmethyl which may be substituted with 1 to 3 of substituent(s) selected from the group consisting of the following (i)-(xi):

(i) C1-4 alkyl,

(ii) C1-4 alkoxy,

(iii) phenyl,

(iv) phenoxy,

(v) benzyloxy,

(vi) -SR^{31} (in which, R^{31} is hydrogen or C1-4 alkyl),

(vii) C2-5 acyl,

(viii) halogen,

(ix) C1-4 alkoxycarbonyl,

(x) nitro,

(xi) -$NR^{32}R^{33}$ (in which, R^{32} and R^{33} each, independently, is hydrogen, C1-4 alkyl or C1-4 alkoxycarbonyl, or R^{32} and R^{33} taken together with nitrogen atom to which is attached represents 5 to 7-membered saturated heterocyclic ring necessary containing one nitrogen atom and optionally further containing one nitrogen atom or one oxygen atom),

J is

1) -O-,

2) -NR^{34}- (in which, R^{34} is hydrogen, C1-4 alkyl which may be substituted with one phenyl, $NR^{35}R^{36}$ (in which, R^{35} and R^{36} each, independently, is hydrogen or C1-4 alkyl), hydroxy, C1-4 alkoxy, -(C1-4 alkylene)-OH, -(C1-4 alkylene)-O-(C1-4 alkyl) or -(C1-4 alkylene)-O-(C2-5 acyl)),

3) -NR^{37}-NR^{38}- (in which, R^{37} and R^{38} each, independently, is hydrogen or C1-4 alkyl which may be substituted with one phenyl),

4) -NR^{39}-(C1-4 alkylene)-NR^{40}- (in which, R^{39} and R^{40} each, independently, is hydrogen or C1-4 alkyl which may be substituted with one phenyl),

5) -NR^{41}-(C1-4 alkylene)-O- (in which, R^{41} is hydrogen or C1-4 alkyl which may be substituted with one phenyl) or

6) -NR^{42}-(C1-4 alkylene)-S- (in which, R^{42} is hydrogen or C1-4 alkyl which may be substituted with one phenyl),

R^4 is R^{4-1} or R^{4-2},

R^{4-1} is

piperidinyl which may be substituted with 1 to 3 of substituent(s) selected from the group consisting of the following (i)-(x):

(i) C1-4 alkyl,

(ii) C1-4 alkoxy,

(iii) -SR^{46} (in which, R^{46} is hydrogen or C1-4 alkyl),

(iv) C2-5 acyl,

(v) halogen,

(vi) C1-4 alkoxycarbonyl,

(vii) nitro,

(viii) -$NR^{47}R^{48}$ (in which, R^{47} and R^{48} each, independently, is hydrogen, C1-4 alkyl or C1-4 alkoxycarbonyl),

(ix) hydroxy,

(x) -(C1-4 alkylene)-O-(C1-4 alkyl),

R^{4-2} is -L-M,

-L- is a piperidine ring,

M is

1) carbocyclic ring,

2) heterocyclic ring,

3) C1-4 alkyl substituted with 1 to 2 of substituent(s) selected from the group consisting of the following (i)-(ii):

(i) carbocyclic ring,

(ii) heterocyclic ring,

4) -O-(carbocyclic ring or heterocyclic ring),

5) -S-(carbocyclic ring or heterocyclic ring),

6) $-NR^{49}$-(carbocyclic ring or heterocyclic ring) (in which, R^{49} is hydrogen or C1-4 alkyl which may be substituted with one phenyl),

7) -O-(C1-4 alkylene)-(carbocyclic ring or heterocyclic ring),

8) -S-(C1-4 alkylene)-(carbocyclic ring or heterocyclic ring),

9) $-NR^{50}$-(C1-4 alkylene)-(carbocyclic ring or heterocyclic ring) (in which, R^{50} is hydrogen, C1-4 alkyl which may be substituted with one phenyl or C2-5 acyl which may be substituted with 1 to 3 of halogen) or

10) -CO-(carbocyclic ring or heterocyclic ring),

or the said piperidine ring in L, and the said carbocyclic ring and heterocyclic ring in M may be substituted with 1 to 3 of substituent(s) selected from the group consisting of the following (i)-(xiv):

(i) C1-4 alkyl,

(ii) C2-4 alkenyl,

(iii) hydroxy,

(iv) C1-4 alkoxy,

(v) -(C1-4 alkylene)-OH,

(vi) -(C1-4 alkylene)-O-(C1-4 alkyl),

(vii) halogen,

(viii) $NR^{51}R^{52}$ (in which, R^{51} and R^{52} each, independently, is hydrogen, C1-4 alkyl or C1-4 alkoxycarbonyl, or R^{51} and R^{52} taken together with nitrogen atom to which is attached represents 5 to 7-membered saturated heterocyclic ring necessary containing one nitrogen atom and optionally further containing one nitrogen atom or one oxygen atom),

(ix) SR^{53} (in which, R^{53} is hydrogen or C1-4 alkyl),

(x) nitro,

(xi) trifluoromethyl,

(xii) C1-4 alkoxycarbonyl,

(xiii) oxo,

(xiv) C2-5 acyl

or a non-toxic salt thereof, or a hydrate thereof.

2. (Original) A compound according to claim 1, in which E is -COO-, -O-, -S-, -SO- or $-SO_2-$.

3. (Original) A compound according to claim 1, in which E is -O- or -S-.

4.-9. (Canceled)

10. (Previously presented) A compound according to claim 1 which is:

1) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(pyridin-3-ylcarbonyl)thiazolidin-4-ylcarbonylamino)propanamide,

2) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-acetyloxymethylcarbonylthiazolidin-4-ylcarbonylamino)propanamide,

3) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(2-methoxyacetyl)thiazolidin-4-ylcarbonylamino)propanamide,

4) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-allyloxycarbonylthiazolidin-4-ylcarbonylamino)propanamide,

5) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((4R)-3-(2-ethoxy-1,2-dioxoethyl)thiazolidin-4-ylcarbonylamino)propanamide,

6) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((4R)-3-phenylsulfonylthiazolidin-4-ylcarbonylamino)propanamide,

7) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-dimethylaminomethylcarbonylthiazolidin-4-ylcarbonylamino)propanamide,

8) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(morpholin-4-ylmethylcarbonyl)thiazolidin-4-ylcarbonylamino)propanamide,

9) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(3-hydroxy-3-methylbutyryl)thiazolidin-4-ylcarbonylamino)propanamide,

10) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(2-hydroxyethyl)thiazolidin-4-ylcarbonylamino)propanamide,

11) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(3-hydroxy-3-methylbutyl)thiazolidin-4-ylcarbonylamino)propanamide,

12) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(3-hydroxypropyl)thiazolidin-4-ylcarbonylamino)propanamide,

13) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-carboxymethylthiazolidin-4-ylcarbonylamino)propanamide,

14) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-t-butoxycarbonyl-1,1-dioxothiazolidin-4-ylcarbonylamino)propanamide,

15) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-t-butoxycarbonyl-1-oxothiazolidin-4-ylcarbonylamino)propanamide,

16) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((4S)-3-t-butoxycarbonyl-2-oxooxazolidin-4-ylcarbonylamino)propanamide,

17) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-hydroxymethylcarbonylthiazolidin-4-ylcarbonylamino)propanamide,

18) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(morpholin-4-ylcarbonylmethyl)thiazolidin-4-ylcarbonylamino)propanamide,

19) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(2-methoxyethoxycarbonyl)thiazolidin-4-ylcarbonylamino)propanamide,

20) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-chloromethoxycarbonylthiazolidin-4-ylcarbonylamino)propanamide,

21) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-(3,3-dimethylbutyryl)thiazolidin-4-ylcarbonylamino)propanamide,

22) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-cyclopentylcarbonylthiazolidin-4-ylcarbonylamino)propanamide,

23) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-benzoylthiazolidin-4-ylcarbonylamino)propanamide,

24) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((4R)-3-(3,3-dimethyl-1,2-dioxobutyl)thiazolidin-4-ylcarbonylamino)propanamide,

25) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((4R)-2,2,5,5-tetramethylthiazolidin-4-ylcarbonylamino)propanamide,

26) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((2S)-1-t-butoxycarbonyl-4-oxopyrrolidin-2-ylcarbonylamino)propanamide or

27) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-((2S, 4R)-1-t-butoxycarbonyl-4-hydroxypyrrolidin-2-ylcarbonylamino)propanamide

or non-toxic salts thereof.

11. (Original) A compound according to claim 1 which is

1) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-isopropylsulfonylthiazolidin-4-ylcarbonylamino)propanamide,

2) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-cyclopentylsulfonylthiazolidin-4-ylcarbonylamino)propanamide or

3) (2R)-N-(1-benzylpiperidin-4-yl)-3-cyclohexylmethylthio-2-((4R)-3-isobutylsulfonylthiazolidin-4-ylcarbonylamino)propanamide

or non-toxic salts thereof.

12. (Previously presented) A pharmaceutical composition comprising, as an active ingredient, an amino acid compound of the formula (I) depicted in claim 1, a non-toxic salt thereof, or a hydrate thereof, and a pharmaceutically acceptable carrier or diluent.

13.-15. (Canceled)

16. (Previously presented) A method for treating a disease induced by an excessive release of neurotransmitters from N-type calcium channels, comprising administering to a host in need of such treatment an effective amount of an amino acid compound of formula (I) depicted in claim 1, a non-toxic salt thereof, or a hydrate thereof.

17. (Currently Amended) A method for treating ~~the~~ a disease induced by an excessive release of neurotransmitters from N-type calcium channels selected from the group consisting of cerebral infarct, transient ischemic attack, hypertension with stress, epilepsy, asthma and pollakiuria.

18. (Previously Presented) A method for the treatment of pain induced by an excessive release of neurotransmitters from N-type calcium channels, comprising administering to a host in need of such treatment an effective amount of an amino acid compound of formula (I) depicted in claim 1, a non-toxic salt thereof, or a hydrate thereof.